

## INFRAGENERIC NOMENCLATURE: CORRECTIONS AND ADDITIONS IN THE CARYOPHYLLACEAE

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### INTRODUCTION

A major task facing the author of a family treatment for the *Generic Flora of the Southeastern United States* involves investigation of the infrageneric nomenclature of each genus known from the region. In the Caryophyllaceae, I discovered problems in the infrageneric nomenclature of nine genera. The intent of this paper is to report changes that are necessary to support the infrageneric classification I intend to present in the *Generic Flora* treatment.

Errors involving infrageneric nomenclature may be of several types. One of the most prevalent involves assumptions of rank for names that were published without a clear indication of rank. A primary example is the treatment of the Caryophyllaceae in Boissier's *Flora Orientalis* (1867). This work is often cited as the source for a number of section names in several of the large genera in the Caryophyllaceae (e.g., *Dianthus*, *Gypsophila*, and *Silene*). In each of these cases, the epithet appears in boldface preceded by “§”; in many works, this mark does indicate the rank of section (Stearn 1966). While Boissier used this mark for the single infrageneric divisions in *Dianthus* and *Minuartia*, he also used it within ranked infrageneric divisions in other genera. In *Cerastium* and *Gypsophila*, epithets preceded by § are used within sections (so designated). The 31 epithets preceded by § in *Silene* appear within series and subseries that Boissier does designate. I follow Chater and Walters (1964), Devjatov (1987), McNeill (1962), Reeve (1967), and Sourková (1977) in assuming such combinations, in various genera, to be unranked.

Another common error involves adoption of names that were proposed but not validly published. Volume 6 of the *Flora URSS* (Schischkin 1936) included a significant treatment of the Caryophyllaceae. In treating the larger genera (e.g., *Dianthus*, *Gypsophila*, and *Silene*), Schischkin included an infraspecific classification for each of them, often with many new names and combinations. All of his new taxa were described in Russian without accompanying Latin and thus are not validly published, since Article 36.1 of the Code requires a Latin description or diagnosis for any name published after 1 January 1935.

Two other errors that are sometimes seen involve the use of names that are not validly published, because they were given a rank contrary to the hierarchy established in Art. 5, e.g., Fenzl's use of “Divisio” within a section of *Cerastium* in Ledebour (1841-1843, *Cerastium*, p. 396-416, published in 1842 fide Stafleu & Cowan, 1979), and the incorrect typification of infrageneric names that are based on monotypic genera, e.g., Barkoudah's (1962) errors in *Gypsophila*.

A few changes are necessitated by changes in application of infrageneric autonyms. In three editions of the Code (Lanjou et al. 1956, 1961, 1966), Art. 22 included the following statement: "a section including the type species of any subgenus must bear as its epithet the correct epithet of the subgenus." Wood and Webster (1968) proposed "to restrict the tautonymic provisions of Articles 19, 22, and 26 to taxa which include the nomenclatural types." These proposals were accepted at the 1969 Seattle Congress (Staffeu 1970) but led to subsequent debate (summarized in Brummitt, 1981) and extension of their concept to all infrageneric ranks at the Sydney Congress (Voss 1982). In the current edition of the Code (Greuter et al. 1988), Art. 22.1 and Note 1 continue to allow autonyms only for taxa including the type of the generic name; all other names must have a description or diagnosis or be associated with a reference to such (Art. 32.1). Article 34.3, allowing valid publication "where the same combination is simultaneously used at different ranks," allows many of the autonyms formed under pre-1969 provisions to stand unless an earlier name exists.

One assumption that I have made in this presentation deserves additional comment. In several pre-1953 cases, e.g., *Arenaria* sect. *Eremogone*, it is not entirely clear whether an author, by not adopting an earlier available epithet, is deliberately publishing a new name or actually making (although implicitly) a new combination. I have assumed the latter argument here, with the earliest name serving as the basionym even if it was not explicitly cited. Later variant spellings of homotypic names are then rejected under Art. 75 and heterotypic names under Art. 64.

The necessary changes in Caryophyllaceae are presented below, arranged alphabetically by genus. Only names that require changes are presented.

## CORRECTIONS BY GENUS

### ARENARIA

McNeill (1962) revised most of the infrageneric nomenclature in *Arenaria*. He described series within five sections and used [then] autonyms for the series that included the type of the section; use below the section level was not mandated (nor prohibited) by the Code (Lanjou et al. 1961) at that time.

One of the series, *Arenaria*, is now mandated under Art. 22.1. The other four were validly published, since McNeill provided a Latin description, type citation, and a clear indication of rank for each name. McNeill cited *Arenaria* sect. *Eremogone* as an "autonym" within *Arenaria* subg. *Eremogone*; the correct citation is given below.

***Arenaria* sect. *Eremogone*** (Fenzl) Edgew. & Hook. f., Fl. Brit. India 1: 236. 1874 ["*Eremogoneac*"]. *Eremogone* Fenzl, Vers. Darst. Verbr. Alsin. 13. 1833. *Arenaria* a. *Eremogone* (Fenzl) Fenzl in Endl., Gen. pl. 967. 1840.—LECTOTYPE: *Arenaria graminifolia* Schrader (vide McNeill, Notes Roy. Bot. Gard. Edinburgh 24: 121. 1962).

### CERASTIUM

The citation for *Cerastium* sect. *Schizodon* must be changed to reflect an earlier combination. Although Williams cited the name as "Sect. *Schizodontia*,"

he did include *Cerastium dichotomum* L., one of the two syntypes included in Fenzl's protologue and here designated as the lectotype of the name of the section.

**Cerastium** sect. **Schizodon** (Fenzl) Williams, Bull. Herb. Boiss. 6: 899. 1898 ["Schizodontia"]. *Cerastium* b. *Schizodon* Fenzl. in Endl., Gen. pl. 970. 1840. *Cerastium* sect. *Schizodon* (Fenzl) Schischkin, Fl. URSS 6: 447. 1936.—LECTOTYPE, here designated: *Cerastium dichotomum* L.

Two of the subsectional names used by Rico (1990) require modification. The earliest name for the *C. fontanum* Baumg. complex is not *Cerastium* subsect. *Caespitosa* Pax & K. Hoffm. (1934) but the following (Art. 22.4.).

**Cerastium** subsect. **Vulgata** Hayek, Fl. Steierm. 1: 304. 1908.—TYPE: *Cerastium vulgatum* L., nom. ambig. [= *Cerastium fontanum* Baumg.].

The citation for *Cerastium* subsect. *Fugacia* must be changed. The authorship, given by Rico (1990) as Fenzl, is incorrect, since Fenzl treated the group as a "Divisio" in Ledebour (1841–1843, *Cerastium*, p. 396–416, published in 1842, fide Stafleu & Cowan, 1979); under Art. 33.4 the name is not validly published, since Fenzl's use of "Divisio" within a section is contrary to the hierarchy established in Art. 5. The correct citation is:

**Cerastium** subsect. **Fugacia** Hayek, Fl. Steierm. 1: 307. 1908.

## DIANTHUS

1) *Ranking Boissier's names.* Rechinger (1988) assumed that § = section, in my opinion incorrectly, for five of the six sections that he recognized in his treatment of *Dianthus* in the *Flora Iranica*. Boissier (1867) noted that the species of *Dianthus* were closely related and "in sectiones naturales difficile distribuendae." Five names must be replaced by the earliest ranked combinations.

**Dianthus** sect. **Carthusiani** (Boiss.) F. Williams, J. Bot. 23: 341. 1885 ["Carthusianum"]. *Dianthus* § [without rank] 5. *Carthusiani* Boiss., Fl. Orient. 1: 481. 1867.

**Dianthus** sect. **Suffruticosi** F. Williams, J. Bot. 23: 341. 1885. *Dianthus* § [without rank] 4. *Dentati* Boiss., Fl. Orient 1: 480. 1867.

**Dianthus** sect. **Tetralepides** Pax in Engler, Nat. Pflanzenfam. 3(1b): 77. 1889. *Dianthus* § [without rank] 2. *Leiopetali* Boiss., Fl. Orient. 1: 479. 1867. *Dianthus* sect. *Tetralepides* *Leiopetala* F. Williams, J. Bot. 23: 346. 1885, nom. inval.

**Dianthus** sect. **Verruculosi** (Boiss.) Schischkin, Fl. URSS 6: 860. 1936. *Dianthus* § [without rank] 1. *Verruculosi* Boiss., Fl. Orient. 1: 479. 1867.

**Dianthus** sect. **Fimbriati** (Boiss.) F. Williams, J. Bot. 23: 343. 1885 ["Fimbriatum"]. *Dianthus* § [without rank] 3. *Fimbriati* Boiss., Fl. Orient. 1: 480. 1867.

2) *Usage of names proposed by Schischkin in 1936.* Schischkin included 14 new series names in his treatment of *Dianthus*. Validation of these names should await the desperately needed comprehensive revision of this genus.

3) *Sectional names that have priority.* Two sectional names must be replaced by earlier names.

**Dianthus** sect. **Armeriastrum** Ser. in DC., Prodr. 1: 355. 1824. *Dianthus* sect. *Armerium* F. Williams, J. Bot. 23: 340. 1885.—TYPE: *Dianthus armeria* L. (Art. 22.4).

**Dianthus** sect. **Chamaegarophalon** Griseb., Spic. Fl. Rumel. 1: 193. 1843. *Dianthus* sect. *Barbulatum* F. Williams, J. Bot. 23: 344. 1885.—LECTOTYPE, here designated: *Dianthus myrtinervius* Griseb.

### GYSOPHILA

Several nomenclature problems, mostly arising from Barkoudah's (1962) revision of *Gypsophila*, must be addressed.

1) *Ranking Boissier's names.* Barkoudah (1962) assumed, in my opinion incorrectly, that the six names set in boldface and preceded by § that Boissier (1867) included within sections should be considered as subsections. The authorship must therefore be changed in four of Barkoudah's subsectional combinations.

**Gypsophila** subsect. **Pulvinares** (Boiss.) Barkoudah, Wentia 9: 37. 1962. *Gypsophila* § [without rank] 1. *Pulvinares* Boiss., Fl. Orient. 1: 534. 1867.

**Gypsophila** subsect. **Caespitosae** (Boiss.) F. Williams, J. Bot. 27: 325. 1889. *Gypsophila* § [without rank] 3. *Cespitosae* Boiss., Fl. Orient. 1: 535. 1867.

**Gypsophila** subsect. **Paniculatae** (Boiss.) F. Williams, J. Bot. 27: 325. 1889. *Gypsophila* § [without rank] 4. *Paniculatae* Boiss., Fl. Orient. 1: 535. 1867.

**Gypsophila** subsect. **Suffruticosae** (Boiss.) Barkoudah, Wentia 9: 42. 1962. *Gypsophila* § [without rank] 5. *Suffruticosae* Boiss., Fl. Orient. 1: 535. 1867.

2) *Usage of names proposed by Schischkin in 1936.* As noted above, new names appearing in Schischkin (1936) are not validly published. Three names used, but not validated, by Barkoudah (1962) are validated here.

**Gypsophila** subsect. **Acutifoliae** Rabeler, subsect. nov. *Gypsophila* ser. "Acutifoliae" Schischkin, Fl. URSS 6: 757. 1936.—TYPE: *Gypsophila acutifolia* Fisch.

Plantae plus minusve glaucae, inflorescentia furcis valde glanduloso-pubescentibus instructa; calyx 3–4 mm longus, glaber, dentibus acutis.

**Gypsophila** ser. **Elegantes** Schischkin ex Rabeler, ser. nov. *Gypsophila* ser. "Elegantes" Schischkin, Fl. URSS 6: 763. 1936.—TYPE: *Gypsophila elegans* M. Bieb.

Herbae annuae vel rarius perennes; caules ramosi glabri. Petala alba vel rosea, emarginata, sepalis 2–4plo longiora, ovarium 12–18 ovulis instructum.

**Gypsophila** ser. **Hispidae** (Rech.f.) Schischkin ex Rabeler, stat. nov. *Gypsophila* ser. "Hispidae" Schischkin, Fl. URSS 6: 770. 1936. *Gypsophila* sect. *Hispidae* Rech.f., Fl. Iran 163: 241. 1988.—TYPE: *Gypsophila fedtschenkoana* Schischkin (Rechinger 1988).

Barkoudah's (1962) choice of *Gypsophila pilosa* Huds. as the type of this series has no standing, since the name for Schischkin's series was not validly published.

3) *Citation and typification of names involving monotypic genera.* When *Heterochroa* Bunge was described in 1830, Bunge included one species, *H. petraea* Bunge. Most subsequent authors have treated Bunge's genus as *Gypsophila* sect. *Heterochroa* (Bunge) Fenzl (e.g., Barkoudah 1962; Rechinger 1988), based on Fenzl's treatment of the Caryophyllaceae in Endlicher's *Genera Plantarum* (1836–1840; *Gypsophila*, p. 971–972, published in 1840, fide Stafleu & Cowan, 1976). If one accepts the arguments of Brizicky (1969) for considering infrageneric names appearing in that volume "as published without an indication of rank," as I did earlier in the case of *Petrorhagia* (Rabeler 1984), then Fenzl's combination is rankless and cannot be used. This is also consistent with McNeill's (1962) treatment of Fenzl's names in *Arenaria* and *Minuartia*. The corrected citation is:

**Gypsophila** sect. **Heterochroa** (Bunge) A. Braun, Flora 26: 383. 1843. *Heterochroa* Bunge in Ledebour, Fl. Alt. 2: 131. 1830. *Gypsophila* b. *Heterochroa* (Bunge) Fenzl in Endl., Gen. pl. 972. 1840.—TYPE: *Heterochroa petraea* Bunge [= *Gypsophila sericea* (Ser.) Krylov].

The choice of *Gypsophila microphylla* (Schrenk) Fenzl as the type of *Gypsophila* sect. *Heterochroa* by Barkoudah (1962) and Rechinger (1988) is incorrect. Bunge included a single species in his protologue of *Heterochroa*; according to Art. 10.2, the type of its name must be the type of the generic name. This type is maintained for all combinations involving that name (Art. 7.12).

The attribution of *Gypsophila* sect. *Dichoglottis* presents a similar situation. In 1835, Fischer and Meyer described *Dichoglottis*, including one species, *D. linearifolia* Fischer & C. Meyer. Most subsequent authors have included *Dichoglottis* within *Gypsophila*, most recently as a section (e.g., Barkoudah 1962; Rechinger 1988). In this case, Barkoudah (1962) attributed the combination to Boissier and did not recognize Fenzl's earlier subgeneric placement in Endlicher (1836–1840). Because an earlier combination exists, the correct citation is as follows.

**Gypsophila** sect. **Dichoglottis** (Fischer & C. Meyer) A. Braun, Flora 26: 383. 1843. *Dichoglottis* Fischer & C. Meyer, Index Sem. Hort. Petropol. 1: 25. 1835.—TYPE: *Dichoglottis linearifolia* Fischer & C. Meyer [= *Gypsophila linearifolia* (Fischer & C. Meyer) Boiss.].

The choice of *Gypsophila elegans* M. Bieb. as type of *Gypsophila* sect. *Dichoglottis* by Barkoudah (1962) and Rechinger (1988) is incorrect. Since Fischer and Meyer included a single species within *Dichoglottis*, the type of its name must be

the type of the name of the genus (Art. 10.2) and any subsequent combinations (Art. 7.12).

Within *Gypsophila* sect. *Dichoglottis*, Barkoudah (1962) described subsect. *Purpurae*, typifying it with *G. elegans* M. Bieb. Barkoudah (1962) included *G. capillaris* (Forssk.) C. Christ in *Gypsophila* subsect. *Purpurae*. *Rokejeka capillaris* Forssk. is the type of the monotypic genus *Rokejeka* Forssk. and an earlier subsectional combination in *Gypsophila*. Hence, Barkoudah's name and type fall into synonymy of the correct name:

***Gypsophila* subsect. *Rokejeka*** (Forssk.) F. Williams, J. Bot. 27: 325. 1889 ["*Rokejekae*"]. *Rokejeka* Forssk., Fl. Aegypt. Arab. 90. 1775. *Gypsophila* subsect. *Purpurae* Barkoudah, Wentia 9: 44. 1962.—TYPE: *Rokejeka capillaris* Forssk. [= *Gypsophila capillaris* (Forssk.) C. Christ.].

4) *The correct name for Gypsophila subg. Pseudosaponaria*. Barkoudah (1962) followed Williams (1889) in recognizing *Gypsophila* subg. *Pseudosaponaria* Williams, but Rechinger (1988) accepted the name *Gypsophila* subg. *Hagenia* (Moench) Fenzl. Although *Gypsophila* sect. *Hagenia* is the correct name at the rank of section, *Hagenia* was not transferred to subgeneric rank until 1934. Contrary to Rechinger (1988), Fenzl (in Endlicher 1836–1840) did not make any combination involving *Hagenia* but included *Hagenia* in the synonymy of his "a. *Dichoglottis*."

## LYCHNIS

Modifying Pax and Hoffmann's (1934) treatment of *Lychnis* to reflect more current views (Chater 1964; Jalas & Suominen 1986) requires adopting an autonym (*Lychnis* subg. *Lychnis* = Pax and Hoffmann's *Lychnis* subg. *Eulychnis* DC., nom. inval.) as well as one change in authorship and one new combination.

The correct author citation of *Lychnis* subgenus *Coronaria* is (Guett.) Pax, rather than (L.) Pax. Linnaean usage of *Coronaria* dates from 1737 (Gorshkova in Schischkin 1936), but Guettard was the first to adopt it after 1753 (Dandy 1967). Although two earlier combinations at this rank exist in Reichenbach (1828), neither can be used. Usage of *Lychnis* subg. *Agrostemma* (L.) Reichenb. would be counter to Art. 10.2 since the type of the generic name *Agrostemma* L. (*A. githago* L.) is excluded. Reichenbach also listed *Lychnis* subg. "*Muscipula*" Riv., a pre-Linnaean name that can be attributed to Ruppium (Pfeiffer 1874), as equivalent to *Coronaria* L.; the lack of a description (or correct reference to one) prevents usage (Art. 32).

The inclusion of the rather aberrant *Polyschemone nivalis* (Kit. ex J. A. Schultes) Schott, Nyman & Kotschy within *Lychnis* by Chater (1964) and Jalas and Suominen (1986) suggests the need for the following combination to emphasize the disparity between this species and other members of the genus.

***Lychnis* subg. *Polyschemone*** (Schott, Nyman & Kotschy) Rabeler, comb. nov.  
*Polyschemone* Schott, Nyman & Kotschy, Analecta Bot. 55. 1854.—TYPE: *Lychnis nivalis* Kit. ex J. A. Schultes.

## MINUARTIA

McNeill (1962), in revising the infrageneric classification of *Minuartia*, included seven autonyms at the series level. One of these, *Minuartia* ser. *Minuartia*, is expected. Names that Mattfeld published as series have priority over the remaining six; only one was used by both Mattfeld and McNeill. McNeill (1962) cited *Minuartia* subsect. *Spectabiles* (Fenzl) McNeill as an autonym; this combination is validly published under Art. 34.3.

**Minuartia** ser. **Biflorae** Mattf., Repert. Spec. Nov. Regni Veg. Beih. 15: 183. 1922. *Minuartia* ser. *Spectabiles* McNeill, Notes Roy. Bot. Gard. Edinburgh 24: 140. 1962.

**Minuartia** ser. **Laricifoliae** Mattf., Repert. Spec. Nov. Regni Veg. Beih. 15: 182. 1922; McNeill, Notes Roy. Bot. Gard. Edinburgh 24: 142. 1962.

**Minuartia** ser. **Cerastiifoliae** Mattf., Repert. Spec. Nov. Regni Veg. Beih. 15: 136. 1922. *Minuartia* ser. *Lanceolatae* McNeill, Notes Roy. Bot. Gard. Edinburgh 24: 143. 1962.

**Minuartia** ser. **Flaccidae** Mattf., Repert. Spec. Nov. Regni Veg. Beih. 15: 148. 1922. *Minuartia* ser. *Acutiflorae* McNeill, Notes Roy. Bot. Gard. Edinburgh 24: 145. 1962.

**Minuartia** ser. **Fasciculatae** Mattf., Repert. Spec. Nov. Regni Veg. Beih. 15: 54. 1922. *Minuartia* ser. *Xeralsine* McNeill, Notes Roy. Bot. Gard. Edinburgh 24: 149. 1962.

**Minuartia** ser. **Tenuifoliae** Mattf., Repert. Spec. Nov. Regni Veg. Beih. 15: 32. 1922. *Minuartia* ser. *Sabulina* McNeill, Notes Roy. Bot. Gard. Edinburgh 24: 150. 1962.

Two of the sectional names used by McNeill (1962) require author citation changes to reflect earlier combinations made by Hayek (1908–1911; p. 273–277 published in 1908, fide Stafleu & Cowan, 1979).

**Minuartia** sect. **Aretioideae** (Fenzl) Hayek, Fl. Steierm. 1: 277. 1908.

**Minuartia** sect. **Sabulina** (Reichenb.) Hayek, Fl. Steierm. 1: 273. 1908 [“Sabulineae”].

The attribution of *Minuartia* subg. *Rhodalsine* must also be changed. McNeill (1962), citing *Minuartia* subg. *Rhodalsine* (Gay) Graebner, referred to p. 774 in Ascherson & Graebner (1913–1919; p. 774, published in 1918, fide Stafleu & Cowan, 1976) as the place of publication for this combination. Graebner indeed recognized this subgenus, but as *Minuartia* subg. *Psammophilae* (Fenzl) Graebner, and cited *Rhodalsine* in synonymy; under Art. 34.1(c), the combination McNeill cited is not validly published. Pax's earlier (1889) recognition of *Alsine*

subg. *Rhodalsine* (Gay) Pax, however, predates Graebner's combination, and allows retention of the name that McNeill chose. The correct citation is:

**Minuartia** subg. **Rhodalsine** (Gay) McNeill, Notes Roy. Bot. Gard. Edinburgh 24: 134, 1962.

### PARONYCHIA

Two of the subgeneric combinations proposed by Chaudhri (1968) had been previously published.

**Paronychia** subg. **Siphonychia** (Torrey & A. Gray) Reichenb., Deut. Bot.-Herb. Buch. 162. 1841; Chaudhri, Meded. Bot. Mus. Herb. Rijks. Univ. Utrecht 285: 82. 1968.

**Paronychia** subg. **Anoplonychia** (Fenzl) Reichenb., Deut. Bot.-Herb. Buch. 162. 1841; Chaudhri, Meded. Bot. Mus. Herb. Rijks. Univ. Utrecht 285: 91. 1968.

One of the three autonyms that Chaudhri (1968) chose within *Paronychia* subg. *Anoplonychia* (Fenzl) Reichenb. must be replaced by an earlier name.

**Paronychia** sect. **Anoplonychia** (Fenzl) Fenzl in Ledeb., Fl. Ross. 2: 162. 1843. *Paronychia* a. *Anoplonychia* Fenzl in Endl., Gen. pl. 958. 1839.

The other two names, *Paronychia* subsect. *Anoplonychia* (Fenzl) Chaudhri and *Paronychia* subsect. *Heterosepalae* (Chaudhri) Chaudhri, are validly published according to Art. 34.3; these names were simultaneously used for sections and subsections.

### SAPONARIA

1) *Typification and placement of Spanizium*. Grisebach described the genus *Spanizium* in 1843, including a single species originally described in *Saponaria*, *Saponaria ocymoides* (L.) Griseb. Two separate issues arise from Grisebach's action: the identity of the type of the generic name and the placement of *Spanizium* when its type is included in *Saponaria*.

Shultz resurrected *Spanizium* in 1984, using it to segregate *Saponaria prostrata* Willd. from *Saponaria*. He argued (Shultz 1984, 1989) that Grisebach (1843) misidentified a specimen of *S. prostrata* as *S. ocymoides* when he described *Spanizium*. Shultz cited the type of *Spanizium* as "*S. ocymoides* (L.) Griseb. p.p. excl. basionymo (= *S. prostratum* (Willd.) V. A. Shultz)," an attempt to correct Grisebach's error. Article 10.2 does not allow such a correction; *Spanizium* must be typified by *S. ocymoides* regardless of what Grisebach either had in hand or should have written. Because Shultz explicitly excluded Grisebach's type of *Spanizium*, he created a later homonym of *Spanizium* (Art. 48). Two courses of action are possible. *Spanizium* sensu Shultz can be retained only if conserved with *S. prostratum* as the type (Art. 14.8). The alternative is a substitute name to segregate



*Saponaria prostrata* and *S. kotschyi* Boiss. from the rest of the genus. I refrain from either course, since I am not convinced of the validity of this segregation.

Boissier (1867) first used *Spanizium* as an infrageneric epithet within *Saponaria*, in this case with rank clearly indicated. He described *Saponaria* sect. *Spanizium* (Griseb.) Boiss., including two species, *S. kotschyi* and *S. prostrata*. A new name is required, since the type of *Spanizium*, *S. ocymoides*, is now placed in a different subgenus (Simmler 1910). According to Art. 10.2, the type of *Spanizium* must be *S. ocymoides* since Grisebach named only one species (*S. ocymoides*) in the protologue. The following name is thus proposed:

**Saponaria** sect. **Prostratae** Rabeler, nom. nov. *Saponaria* sect. *Spanizium* (Griseb.) Boiss., Fl. Orient 1: 529. 1867, descr. excl. type.—TYPE: *Saponaria prostrata* Willd.

2) *An overlooked subgeneric name.* Brizicky (1969) noted that one source of subgeneric names often overlooked is Reichenbach's *Conspectus regni vegetabilis*. The name *Saponaria* subg. *Saporhizaea* Simmler (1910) must be replaced by one such overlooked combination.

**Saponaria** subg. **Proteinia** (Ser.) Reichenb. Conspect. Regn. Veg. 206. 1828 ["Proteinia"]. *Saponaria* sect. *Proteinia* Ser. in DC., Prodr. 1: 366. 1824. *Saponaria* subg. *Saporhizaea* Simmler, Denkschr. Kaiserl. Acad. Wiss., Math.-Naturwiss. Kl. 85: 456. 1910.—LECTOTYPE: *Saponaria orientalis* L. (vide Shultz, Bot. Zhurn. 69: 1479. 1984).

## SILENE

Chowdhuri (1957) published the most recent synopsis of *Silene*, in which he divided the genus into 44 sections including 44 subsections. A number of problems exist in his nomenclature.

1) *Ranking Boissier's names.* As discussed above, I suggest that names set in boldface and preceded by § in Boissier's *Flora Orientalis* (1867) be treated as unranked combinations. In his remarks about *Silene* (p. 567), Boissier admitted the genus is not well understood, stated clearly "non sectiones proposui," and placed "species Orientales in greges quoad potuerim naturales": these greges are the 31 groups with names preceded by § and assumed by Chowdhuri (1957) to be sections. The citations of the following 14 names have been modified to reflect the first clear ranking as sections. Some of these combinations appear in Chater and Walters (1964); yet, the fact that Melzheimer (1988) followed Chowdhuri (1957) in his recent *Silene* treatment in *Flora Iranica* suggests the desirability to present them here.

**Silene** sect. **Italicae** (Rohrb.) Schischkin, Fl. URSS 6: 675. 1936. *Silene* § [without rank] 19. *Paniculatae* Boiss., Fl. Orient. 1: 574. 1867. *Silene* ser. *Italicae* Rohrb. Monogr. *Silene* 77. 1868.

**Silene** sect. **Lasiostemones** (Boiss.) Schischkin, Fl. URSS 6: 631. 1936. *Silene* § [without rank] 21. *Lasiostemones* Boiss., Fl. Orient. 1: 574. 1867.

- Silene** sect. **Sclerocalycinae** (Boiss.) Schischkin, Fl. URSS 6: 636. 1936. *Silene* § [without rank] 23. *Sclerocalycinae* Boiss., Fl. Orient. 1: 575. 1867.
- Silene** sect. **Tunicoideae** (Boiss.) Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 235. 1957. *Silene* § [without rank] 30. *Tunicoideae* Boiss., Fl. Orient. 1: 577. 1867.
- Silene** sect. **Spergulifoliae** (Boiss.) Schischkin, Fl. URSS 6: 652. 1936. *Silene* § [without rank] 14. *Spergulifoliae* Boiss., Fl. Orient. 1: 572. 1867.
- Silene** sect. **Ampullatae** (Boiss.) Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 238. 1957. *Silene* § [without rank] 12. *Ampullatae* Boiss., Fl. Orient. 1: 571. 1867.
- Silene** sect. **Fimbriatae** (Boiss.) Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 241. 1957. *Silene* § [without rank] 17. *Fimbriatae* Boiss., Fl. Orient. 1: 574. 1867.
- Silene** sect. **Brachypodae** (Boiss.) Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 241. 1957. *Silene* § [without rank] 24. *Brachypodae* Boiss., Fl. Orient. 1: 575. 1867.
- Silene** sect. **Auriculatae** (Boiss.) Schischkin, Fl. URSS 6: 656. 1936. *Silene* § [without rank] 15. *Auriculatae* Boiss., Fl. Orient. 1: 572. 1867.
- Silene** sect. **Compactae** (Boiss.) Schischkin, Fl. URSS 6: 615. 1936. *Silene* § [without rank] 6. *Compactae* Boiss., Fl. Orient. 1: 569. 1867.
- Silene** sect. **Succulentae** (Boiss.) Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 244. 1957. *Silene* § [without rank] 25. *Succulentae* Boiss., Fl. Orient. 1: 576. 1867.
- Silene** sect. **Saponarioideae** (Boiss.) Schischkin, Fl. URSS 6: 682. 1936. *Silene* § [without rank] 3. *Saponarioideae* Boiss., Fl. Orient. 1: 568. 1867.
- Silene** sect. **Rigidulae** (Boiss.) Schischkin, Fl. URSS 6: 681. 1936. *Silene* § [without rank] 11. *Rigidulae* Boiss., Fl. Orient. 1: 571. 1867.
- Silene** sect. **Lasiocalycinae** (Boiss.) Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 246. 1957. *Silene* § [without rank] 8. *Lasiocalycinae* Boiss., Fl. Orient. 1: 569. 1867.

Melzheimer's (1988) attributions of the following two sectional names are likewise corrected here.

- Silene** sect. **Scorpioideae** Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 247. 1957. *Silene* § [without rank] 9. *Bipartitae* Boiss., Fl. Orient. 1: 594. 1867. *Silene* ser. *Bipartitae* (Boiss.) Rohrb., Ann. Sci. Nat. Bot. V. 8: 371. 1868. *Silene* ser. *Scorpioideae* Rohrb. Monogr. Silene 67. 1869, nom. superfl.

*Silene* ser. *Bipartitae* appears in Rohrbach's *Conspectus* (1868), replaced without explanation with *Silene* ser. *Scorpioideae* in his later *Monographie* (1869). Although derived from the superfluous series name, *Silene* sect. *Scorpioideae* Chowdhuri is the correct name under Art. 60 and Art. 72, Note 1.

**Silene** sect. **Schaftae** (Boiss.) Melzheimer, Fl. Iran 163: 466. 1988. *Silene* § [without rank] 29. *Schaftae* Boiss., Fl. Orient. 1: 577. 1867.

2) *Usage of names proposed by Schischkin in 1936.* Chowdhuri (1957) adopted three of the sections and 13 of the series names that first appeared in Schischkin's treatment of *Silene* in *Flora URSS* (Schischkin 1936). Although he assumed Schischkin published the series names as subsections, he did realize that none were validly published and provided each with a Latin description and typification. Unless preempted by an earlier combination (noted below), names that Chowdhuri (1957) based on Schischkin's names are validly published and to be ascribed solely to him.

3) *Overlooked subsectional combinations.* Names of twelve of the new subsections that Chowdhuri (1957) described as well as one combination that he made must be changed, because the subsectional combinations based on Rohrbach's (1869) series names were already proposed by Gürke (in Richter 1897–1903, fasc. 2, p. 161–320, published in 1899, fide Stafleu & Cowan, 1983). In all but one case, these changes are in the spirit of Recommendation 22A of the Code; the name of a subsection including the type of the sectional name repeats the sectional epithet.

**Silene** subsect. **Italicae** (Rohrb.) Gürke in Richter, Pl. Eur. 2: 317. 1899. *Silene* subsect. *Patulae* Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 233. 1957.

**Silene** subsect. **Sclerocalycinae** (Boiss.) Gürke in Richter, Pl. Eur. 2: 310. 1899. *Silene* subsect. *Longiflorae* Schischkin ex Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 235. 1957.

**Silene** subsect. **Chloranthae** (Rohrb.) Gürke in Richter, Pl. Eur. 2: 310. 1899. *Silene* subsect. *Ecoranatae* Schischkin ex Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 235. 1957.

**Silene** subsect. **Spergulfoliae** (Boiss.) Gürke in Richter, Pl. Eur. 2: 314. 1899. *Silene* subsect. *Polyphyllae* Schischkin ex Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 238. 1957.

**Silene** subsect. **Suffruticosae** (Rohrb.) Gürke in Richter, Pl. Eur. 2: 311. 1899. *Silene* subsect. *Aucherianae* Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 239. 1957.

**Silene** subsect. **Brachypodae** (Boiss.) Gürke in Richter, Pl. Eur. 2: 303. 1899. *Silene* subsect. *Nutantes* Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 241. 1957, non *Silene* subsect. *Nutantes* (Rohrb.) Gürke, 1899.

- Silene** subsect. **Auriculatae** (Boiss.) Gürke in Richter, Pl. Eur. 2: 298. 1899. *Silene* subsect. *Brevicaules* Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 242. 1957.
- Silene** subsect. **Macranthae** (Rohrb.) Gürke in Richter, Pl. Eur. 2: 299. 1899. *Silene* subsect. *Saxifragae* Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 243. 1957.
- Silene** subsect. **Atocion** (Otth) Gürke in Richter, Pl. Eur. 2: 304. 1899. *Silene* subsect. *Delicatulae* Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 245. 1957.
- Silene** subsect. **Leicalycinae** (Boiss.) Gürke in Richter, Pl. Eur. 2: 307. 1899. *Silene* subsect. *Muscipulae* Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 246. 1957.
- Silene** subsect. **Lasiocalycinae** (Boiss.) Gürke in Richter, Pl. Eur. 2: 309. 1899. *Silene* subsect. *Squamatae* Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 246. 1957.
- Silene** subsect. **Eudianthe** (Reichenb.) Gürke in Richter, Pl. Eur. 2: 309. 1899. *Silene* subsect. *Eudianthe* (Reichenb.) Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 246. 1957.
- Silene** subsect. **Scorpioideae** (Rohrb.) Gürke in Richter, Pl. Eur. 2: 291. 1899. *Silene* subsect. *Pubicalycinae* Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 247. 1957.

4) *Silene* sect. *Melandrifformes* Chowdhuri – a mixed concept. As Chater and Walters (1964) correctly noted, there is an earlier name for Chowdhuri's (1957) *Silene* sect. *Melandrifformes* (Boiss.) Chowdhuri. The type of *Silene* sect. *Melandrifformes*, based on one of Boissier's unranked names, is *S. noctiflora* L., one of two species (the other is *S. elisabethae* Jan) that Fenzl included in his description of *Saponaria*  $\gamma$  *Elisanthe* (in Endlicher 1836–1840, *Saponaria*, p. 972, published in 1840 fide Staffeu & Cowan, 1976). The presence of a calyx inflated only in fruit in *S. noctiflora* rather than, as in *S. elisabethae*, both at anthesis and in fruit, places *S. noctiflora* in agreement with Fenzl's description; it is here designated as the lectotype of Fenzl's unranked group and therefore of the following sectional combination:

**Silene** sect. **Elisanthe** (Fenzl) Ledeb., Fl. Ross. 1: 314. 1842.—LECTOTYPE: *Silene noctiflora* L.

Chowdhuri (1957) considered it best to merge *Melandrium* Röhl. with *Silene* and transferred the so-called "true" melandriums (*Melandrium* sect. *Melandrium*, e.g., *Silene latifolia* Poir.) into *Silene* sect. *Melandrifformes*. As noted above, this sectional name is typified by *S. noctiflora*, a species that, although also often included in *Melandrium*, has always been separated from members of sect. *Melandrium*. Both Ledebour (1841–1843, ordo *Sileneae*, p. 273–337, published in 1842, fide

Stafleu & Cowan, 1979) and Boissier (1867) recognized *Melandrium* but placed *S. noctiflora* in *Silene*. Pax (1889) and later Pax and Hoffmann (1934) included *S. noctiflora* in *Melandrium* as a member of *Melandrium* sect. *Elisanthe* (Fenzl) A. Braun.

In their study of the chloroplast DNA in European members of *Silene* sect. *Elisanthe*, Sandbrink et al. (1989) repeatedly emphasized that *S. noctiflora* was quite isolated, confirming what previous morphological and breeding studies had indicated. They "suggest[ed] that *S. noctiflora* is not correctly classified in *Silene* section *Elisanthe*." Since *S. noctiflora* is the lectotype of sect. *Elisanthe*, the conclusion must be reversed; the other members should be removed from sect. *Elisanthe*. To accomplish the traditional segregation of these taxa within *Silene*, I propose the following new combination:

**Silene** sect. **Melandrium** (Röhl.) Rabeler, comb. nov. *Melandrium* Röhl., Deutsch. Fl. ed. 2. 2: 37, 274. 1812. *Melandrium* sect. *Melandrium* in A. Braun, Flora 26: 371. 1843 ["Eumelandrium"].—TYPE: *Melandrium silvestre* (Schkuhr) Röhl. [= *Silene dioica* (L.) Clairv.].

5) *Miscellaneous corrections*. The citation for *Silene* sect. *Chloranthae* must be changed. Chowdhuri (1957) cited Rohrbach as the author of the sectional name, but Rohrbach (1868, 1869) used it for a series in *Silene*, not a section. The correct citation should be:

**Silene** sect. **Chloranthae** (Rohrb.) Schischkin, Fl. URSS 6: 616. 1936.

As Bocquet (1967) noted, Chowdhuri's (1957) *Silene* sect. *Gastrolychnis* (Fenzl) Chowdhuri must be replaced by the earlier name *Silene* sect. *Physolychnis* (Bentham) Bocquet. Operating under the Art. 22 provisions in effect at that time, Bocquet used an autonym for the subsection including the type of *Silene* sect. *Physolychnis*. Since he provided rank, a Latin description, and typification for this name, it is validly published.

**Silene** subsection. **Physolychnis** (Bentham) Bocquet, Candollea 22: 6. 1967.

*Silene* sect. *Suffruticosae* (Rohrb.) Chowdhuri is predated by Schischkin's earlier publication of the combination. The corrected citation is:

**Silene** sect. **Suffruticosae** (Rohrb.) Schischkin, Fl. URSS 6: 646. 1936.

*Silene* sect. *Inflatae* (Boiss.) Chowdhuri must also be replaced by an earlier name. The lectotype that Chowdhuri (1957) selected, *Silene cucubalus* Wibel [= *S. vulgaris* (Moench) Garcke], is also the type of the monotypic genus *Behen* Moench and, under Art. 10.2, the type of the following combination.

**Silene** sect. **Behen** (Moench) Griseb., Spic. Fl. Rumel. 1: 170. 1843. *Behen* Moench, Meth. 709. 1794, non *Behen* Hill, 1762. *Silene* § [without rank] 16. *Inflatae* Boiss., Fl. Orient. 1: 573. 1867. *Silene* sect. *Inflatae* (Boiss.) Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 241. 1957.—TYPE: *Behen vulgaris* Moench [= *Silene vulgaris* (Moench) Garcke].

The authorship of *Silene* sect. *Heliosperma* cited by Chowdhuri (1957) must be modified, because the combination in Reichenbach's *Flora germanica excursi-ora* is best treated as unranked (Brizicky 1969).

**Silene** sect. **Heliosperma** (Reichenb.) Ledeb., Fl. Ross. 1: 317. 1842. *Silene* "sect." *Heliosperma* Reichenb., Fl. Germ. Exc. 87. 1832.

When Talavera (1979) revised *Silene* sect. *Erectorefractae* Chowdhuri, he described two subsections for the seven included species. *Silene* subsect. *Erectorefractae* is presented as an autonym, contrary to Art. 22.1; however, since a clear citation of rank, typification, and a Latin description is included, the name is valid and the correct citation is:

**Silene** subsect. **Erectorefractae** (Chowdhuri) Talavera, Lagasalia 8: 145. 1979. *Silene* sect. *Erectorefractae* Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 247. 1957.

Zuev (1990) examined Siberian taxa of *Silene* sect. *Graminifoliae* Chowdhuri and described two series for the four included species. *Silene* ser. *Graminifoliae* was presented as an autonym, contrary to Art. 22.1, with a clearly stated rank, a type designation, but with only a Russian description. The correct citation should be:

**Silene** ser. **Graminifoliae** Schischkin ex Rabeler, ser. nov. *Silene* ser. "Graminifoliae" Schischkin, Fl. URSS 6: 625. 1936. *Silene* sect. *Graminifoliae* Chowdhuri, Notes Roy. Bot. Gard. Edinburgh 22: 236. 1957.—TYPE: *Silene graminifolia* Otth.  
Calyx nervis distinctis; caules (2-) 3-9 internodis instructi.

*Silene* sect. *Balcanosilene* Sourková (1977) must be replaced by the following earlier name that Panov (1974) proposed to segregate the same group of species from the remainder of *Silene* sect. *Otites*:

**Silene** sect. **Albopetalae** P. Panov, Compt. Rend. Acad. Bulg. Sci. 27: 1571. 1974.

This correction also affects Devtajov's (1987) inclusion of *Silene* sect. *Balcanosilene* in his treatment of the genus *Otites*, which requires the following new combination.

**Otites** sect. **Albopetalae** (P. Panov) Rabeler, comb. nov. *Silene* sect. *Albopetalae* P. Panov, Compt. Rend. Acad. Bulg. Sci. 27: 1571. 1974.—TYPE: *Otites roemeri* (Friv.) Holub.

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